AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended): A gyroscope comprising at least one mass [[(M)]] capable of vibrating along an x axis at a resonant excitation frequency F_x and capable of vibrating along a y axis perpendicular to the x axis, at a resonant detection frequency F_y, under the effect of the Coriolis force generated by a rotation about a z axis perpendicular to the x and y axes, ~~characterized in that it comprises~~ comprising [[,]] connected to the mass [[(M)]], a signal generator for generating a signal that disturbs the vibration of the mass [[(M)]] along y, and a feedback control loop for controlling the resonant frequency F_y so that F_y is equal or practically equal to F_x throughout the duration of use of the gyroscope, the feedback control loop comprising:

[[-]] means [[(11)]] for modifying the resonant detection frequency F_y;

[[-]] means [[(3)]] for detecting the variation induced by the disturbing signal on the vibration of the mass [[(M)]] along y, an error signal e representative of the difference between F_x and F_y being deduced from this variation; and

[[-]] control means [[(16)]] for controlling the F_y-modifying means [[(11)]], the control being established on the basis of the error signal e.

2. (currently amended): The gyroscope as claimed in ~~the preceding~~ claim 1, ~~characterized in that~~ wherein the disturbing-signal generator is connected to the mass [[(M)]] via the F_y-modifying means [[(11)]].

3. (currently amended): The gyroscope as claimed in ~~the preceding~~ claim 1, ~~characterized in that~~ wherein the disturbing-signal generator is connected to the F_y-modifying means [[(11)]] via the feedback control loop.

4. (currently amended): The gyroscope as claimed in claim 2 ~~or 3~~, ~~characterized in that~~ wherein the disturbing-signal generator is an oscillator [[(12')]] of predetermined reference frequency F_0.

5. (currently amended): The gyroscope as claimed in ~~any one of~~ claim[[s]] 2 ~~to 4~~, ~~characterized in that~~ wherein, since the gyroscope has a predetermined bandwidth, the disturbing signal is a periodic signal of frequency F_0, where F_0 is above the bandwidth of the gyroscope but below F_x.

6. (currently amended): The gyroscope as claimed in claim 1, ~~which includes~~ comprising: excitation means [[(4)]] for exciting the mass [[(M)]] along y, with the aim of counterbalancing the vibration along y generated by the Coriolis force, ~~characterized in that~~ wherein the disturbing-signal generator is connected to the mass [[(M)]] via these excitation means [[(4)]].

7. (currently amended): The gyroscope as claimed in ~~the preceding~~ claim 1, ~~characterized in that it includes~~ comprising: a y excitation loop and ~~in that~~ wherein the disturbing-signal generator is connected to the excitation means [[(4)]] via the y excitation loop.

8. (currently amended): The gyroscope as claimed in claim 6 ~~or 7~~, ~~characterized in that~~ wherein the disturbing-signal generator is a voltage-controlled oscillator [[(12)]].

9. (currently amended): The gyroscope as claimed in ~~any one of~~ claim[[s]] 6 ~~to 8~~, ~~characterized in that~~ wherein, since the gyroscope has a predetermined bandwidth, the disturbing signal is a periodic signal, the frequency of which varies between $F_x - \Delta F$ and $F_x + \Delta F$ according to a frequency F_0, where F_0 is above the bandwidth of the gyroscope but below F_x, ΔF being equal to about 10% of F_x.

10. (currently amended): The gyroscope as claimed in ~~any one of~~ claim[[s]] 6 ~~to 9~~, ~~characterized in that~~ wherein the excitation means [[(4)]] comprise electrodes.

11. (currently amended): The gyroscope as claimed in ~~any one of the preceding~~ claim[[s]] 1, ~~characterized in that~~ wherein the feedback control loop further~~more~~ comprises[[,]] :

connected in series, means [[(7)]] for shaping the signal output by the detection means [[(3)]], an amplitude detection device [[(13)]], an F_0-centered band-pass filter [[(14)]], a synchronous demodulator [[(15)]] for synchronizing with the reference frequency F_0, and an integrator/corrector [[(16)]] that is connected to the means [[(11)]] for modifying the frequency F_y.

12. (currently amended): The gyroscope as claimed in ~~any one of the preceding~~ claim[[s]] 1, ~~characterized in that~~ wherein, since the mass [[(M)]] is connected to a rigid frame [[(C)]] by means of springs along x and y, of respective stiffness K_x and K_y, the means [[(11)]] for modifying the resonant frequency F_y comprise electrodes for controlling the stiffness K_y.

13. (currently amended): The gyroscope as claimed in ~~any one of the preceding~~ claim[[s]] 1, ~~characterized in that~~ wherein the means [[(3)]] for detecting the variation induced in the vibration of the mass along y comprise electrodes.

14. (currently amended): The gyroscope as claimed in ~~any one of the preceding~~ claim[[s]] 1, ~~characterized in that~~ wherein, when the disturbing signal is a periodic signal of predetermined frequency F_0, [[this]] the disturbing signal is a sinusoidal or triangular signal.

15. (currently amended): The gyroscope as claimed in ~~any one of the preceding~~ claim[[s]] 1, ~~characterized in that~~ wherein [[it]] the gyroscope is a micromachined gyroscope having a plane structure and in that the x and y axes lie in the plane of the plane structure.

16. (currently amended): The gyroscope as claimed in ~~any one of~~ claim[[s]] 1 ~~to 14~~, ~~characterized in that~~ wherein [[it]] the gyroscope is a micromachined gyroscope having a plane structure and in that the x axis lies in the plane of the plane structure and the y axis does not lie in the plane of the plane structure.

17. (currently amended): The gyroscope as claimed in ~~any one of~~ claim[[s]] 1 ~~to 14~~, ~~characterized in that~~ wherein [[it]] the gyroscope has a three-dimensional structure.